will always live in the hearts of those who were privileged to be with him for a time at his little shooting cottage near the Laguna de la Janda. His kindness, knowledge, and interest in everything were especially noticeable, but at the same time his soldierlike love of order was never absent. Woe betide the guest who returned the salt-jar to the place where the pepper-pot should have been! The Army has lost a competent officer who continued to work for it in many ways after being physically incapacitated during the South African War from active service; science has lost an earnest follower; but, above all, some of us have lost a real friend.

M. C. BURKITT.

Current Topics and Events.

SIR FRANCIS GALTON was born on February 16, 1822, in the same year as Mendel. The Eugenics Education Society is celebrating the anniversary in a dignified way with addresses on Galton's contributions, not only to eugenics, the cause that was nearest his heart, but to statistics and geography as well. Galton was in more than one striking way the complement of his cousin, Charles Darwin, but especially in this respect: that his imagination was fired with the idea of man's evolution going on. Darwin thought more perhaps of the descent of man, Galton of the ascent; but it is very interesting that the *doyen* among eugenists should be Darwin's own son. The Eugenics Education Society has been fortunate in having had Major Leonard Darwin for many years at its helm. Of course, Charles Darwin and Francis Galton were entirely at one, though the angle from which they regarded man was a little different. What Galton grasped so firmly was the idea of *man evolving,* and that no longer mysteriously, but under the influence of factors which are discoverable by, and amenable to, scientific methods. He had the vision of the control of life, of applying our knowledge of the factors in evolution to the guidance and acceleration of that evolution. This was to him, as he said, "a virile creed, full of hopefulness, and appealing to many of the noblest feelings of our nature." In celebrating the anniversary there is reason for congratulation and encouragement, for Galton's doctrines have made rapid headway. It must be confessed, however, that the need for more enthusiasm is great. Thus we see from Prof. Karl Pearson's letter to the *Times* of January 18 that although the Galton Laboratory is nobly housed, its undertakings—especially in the way of publication—are sadly hampered by lack of funds. The same hindrance affects the Eugenics Education Society, and it is plainly a matter for regret that new knowledge of high importance should be lying unpublished and that educational efforts to diffuse the "virile creed" should have to be slackened when they are so urgently needed.

ON February 19 occurs the tercentenary of the death of Sir Henry Savile, to whom Oxford owes the foundation of the Savilian professorships of geometry and astronomy. Accounted by his contemporaries—among whom were Casaubon and Scaliger—"a man of admirable skill in the Greek and Latin languages and a laborious searcher and generous publisher of the remains of venerable antiquity," Savile was one of the first scholars of the age. Born near Bradley, Yorkshire, in 1549, he matriculated at Brasenose College, became a fellow of Merton College, was elected a proctor of the University, and at one time taught Greek to Queen Elizabeth. From 1585 he was Warden of Merton, and from 1596 Provost of Eton, holding both positions until his death, which took place at Eton. The chairs of geometry and astronomy were founded by him in 1619, Briggs being appointed to the former and Bainbridge to the latter. Among the distinguished men who have held one or the other have been Halley, Sir Christopher Wren, Bradley, Baden-Powell, Pritchard, H. J. S. Smith, and Sylvester. Before Briggs took over the duties of the chair of geometry Savile himself delivered thirteen lectures upon the first eight propositions of Euclid's "Elements," and these were published in 1620. Though Savile's contemporary, Sir Henry Billingsley, sheriff and Lord Mayor of London, had published the first English translation of Euclid's "Elements" in 1570, and the chair of geometry at Gresham College had been founded in 1596, the preamble to the deed of foundation of the Savilian professorships stated that "geometry is almost totally unknown and abandoned in England."

A BILL was introduced in Parliament on February 8 providing that summer time should begin on the last Saturday in March (or, if that is Easter Eve, on the preceding Saturday) and end on the first Sunday in October. These dates have been fixed in agreement with France and Belgium, as a difference in the dates causes confusion in through services. Many astronomers suffer some inconvenience from the use of summer time, but probably most of them would make little of this if they were persuaded that the majority of the community recognised it as a boon. All must agree that, if used, it is well to have its beginning and end fixed in a regular manner. On theoretical grounds, of course, the principle of summer time does not differ from that accepted long ago, when Greenwich time was introduced for the whole of Great Britain. This involved the use of a standard meridian, differing for some places 7° from the local one, and the increase from 7° to 22° is a matter of convention; the first has no more basis in theory than the second. On scientific grounds the main objection to summer time is the confusion due to the varying standard, and the measure now proposed should do something to remove the difficulties thus caused.

ON January 24 Mr. T. East Lones, of the Patent Office, read a paper before the Newcomen Society on "Mechanics and Engineering from the Time of Aristotle to that of Archimedes." Aristotle contains little of interest to engineers, but it was the extraordinary belief in his views that led to the trouble after Galileo, by his experiments from the Leaning Tower of Pisa, had shown the falseness of Aristotle's dictum that the velocity of a body falling in a given medium was proportional to its weight. The works of Archimedes are of a much more valuable nature. His solution of problems regarding floating bodies, his determination of the centre of gravity of various surfaces, his invention of the Archimedean screw, and his investigation of the lever place him among the greatest pioneers in the acquisition of knowledge. Though it is generally believed that Archimedes asserted that he could move the earth with a lever had he a place to stand upon, it appears that Archimedes contemplated the use of compound pulleys for this purpose, and not the lever. After referring to the engines of war of those days, Mr. Lones gave interesting details of the two great aqueducts which led water into Rome, the old Roman roads, and other civil engineering works. He also referred to the tools used by the ancients in the execution of their works.

In an article in the *Quarterly Review* for January Mr. E. Howell discusses at length the problems connected with river control in Mesopotamia. The Tigris and Euphrates are exceptional rivers in the way that their lower reaches break down, throwing off effluents, although eventually they unite and enter the Persian Gulf through a single mouth. Between Bagdad and Ezra's Tomb, a distance of some four hundred miles, the Tigris receives only two tributaries, but throws off five huge effluents besides innumerable smaller channels. The Euphrates in the same portion of its length shows even more marked degeneration, breaking into a thousand petty waterways in the tract known as Shamiyah, reuniting near Shamawah, and again spreading into a waste of shallow waters in Lake Hammar. There seems to be much evidence that this state of affairs is the outcome, not of natural causes, but of man's interference with the river acting through long ages and accentuated by the difference in both rivers between the levels of low water and high flood. It is suggested that if this interference is scientifically regulated the rivers will revert to former conditions, in which their value to man will be greatly enhanced in respect of definite channels and deeper beds. Unregulated riparian cultivation for ages has resulted in the formation of many effluents and the blocking of the river-bed by silt dug from the channel at low water in the construction of the irrigation canal from the shrunken river to the squatter's date-grove. Mr. Howell, quoting Major Walton, explains the process in full, and contends that the remedy lies in the control of riparian cultivation, the regulation of the course and nature of irrigation channels, and the construction of dams or locks on the chief effluents. Some work of this nature carried out from 1916 to 1919 has had noticeably beneficial results on the navigability of the Tigris.

FROM the report on the administration of the Meteorological Department of the Government of India in 1920–21 it appears that the suspension of wireless telegraphy from ships at sea during the war has rendered it more difficult to give information as to the development and path of storms. The system was started again in May, 1920, although it will necessarily take time to regain the former efficiency. The absence of such wireless information apparently led to wrong deductions relative to the movement of a storm in the Arabian Sea between June 6 and 13. There was, fortunately, little loss of life, but in Junagadh State the storm did a large amount of damage; 16,000 houses are said to have fallen, 22,000 trees were uprooted, and 7700 cattle died. Upper-air observations are being made in connection with military flying on the part of the Royal Air Force and for the use of civil aviators when the route Bombay–Calcutta–Rangoon is opened. The number of special forecasts and warning messages sent from Simla during the year was 2994, and from Calcutta 929. In connection with cases of heat-stroke among British soldiers, information was supplied to local medical authorities when the wet-bulb temperature rose above 75° F. Registration of rainfall has been carried out during the year at 2915 stations, for which the returns are published. The growth in departmental activity and changes in total cost are shown by diagram for the last thirteen years. Mention is made of the loss to the Indian Service of Dr. G. C. Simpson through his appointment as Director to the Meteorological Office of the Air Ministry.

THE Royal Astronomical Society was founded as the London Astronomical Society in February, 1820, but did not gain the prefix "Royal" until 1830. At the annual general meeting of February, 1920, the president, Prof. A. Fowler, gave an address on the origin and early days of the society, which had Sir W. Herschel for its first president. There was some opposition to its formation on the part of the Royal Society, but this did not last long. The centenary of the society will be celebrated next June; it will open with a conversazione on the evening of June 8. On June 9 there will be an historical meeting in the morning and a scientific one in the afternoon; at the former three addresses will be given, one introductory by the president, an historical address by Dr. Dreyer, and a biographical address by Prof. Turner. The society will dine together in the evening. A volume dealing with the history of the society is in course of preparation, and may be issued during the year. It is divided into ten decades, and is the work of several collaborators, but Dr. Dreyer, who is well known as an astronomical historian, has contributed the largest share. It will be illustrated by portraits of some of the more celebrated presidents of the society.

THE *Times* of February 13 makes the following announcement:—A Committee has been appointed to discuss the co-ordination of the work of the various Admiralty chemical laboratories. It will consider the scope of all work now carried out at the various laboratories in the Admiralty service, and will report whether any changes can be made with due regard to the requirements of each department interested in the work to avoid dissipation of energy, overlapping of duties, and unnecessarily different conditions of service. Mr. W. J. Evans, Director of Establishments, is chairman, and Mr. J. Lang, of the Admiralty C.E. Branch, is secretary; the other members being Eng. Vice-Adm. Sir George Goodwin, Engineer-in-Chief; Capt. R. R. C. Backhouse, Director of Naval Ordnance; Comdr. L. E. H. Llewellyn, Chief Inspector of Naval Ordnance; Mr. F. E. Smith, Director of Scientific Research; Mr. W. J. Berry, Director of Warship Production; and Mr. F. Ward, Deputy-Director of Armament Supply.

THE Fuel Research Board of the Department of Scientific and Industrial Research has appointed a Committee to advise upon the sampling and analysis of coal. The *personnel* of the Committee is as follows:—Prof. T. Gray (chairman), Prof. J. W. Cobb, Mr. J. T. Dunn, Dr. J. S. Flett, Mr. G. Nevill Huntly, Mr. S. Roy Illingworth, Mr. J. G. King, Dr. C. H. Lander, Dr. R. Lessing, Mr. C. A. Seyler, Mr. F. S. Sinnatt, and Prof. R. V. Wheeler. Secretary, Miss N. Renouf. It is intended that the methods recommended by the Committee shall be adopted in connection with the physical and chemical survey of the national coal resources. Communications for the Committee should be addressed to the secretary at 16 and 18 Old Queen Street, Westminster, London, S.W.1.

WE are glad to see that the Portsmouth Literary and Philosophical Society, which was established in 1869 but was afterwards discontinued, has been revived. There must be many citizens of all classes in such a place as Portsmouth, with the adjacent residential district of Southsea, who will find interest and stimulus in the activities of the new society. The programme for the current session includes descriptive lectures, field excursions, and sectional meetings of students and workers in various departments of knowledge, such as literature, history, geography and geology, botany and zoology, psychology, and social science. The president, Sir Richard Gregory, will deliver his presidential address on "The Influence of Science" to-morrow, February 17. Mr. E. Heron-Allen, F.R.S., and Sir John Brickwood are vice-presidents of the society, Lt.-Col. J. H. Cooke chairman of council, and Mr. C. W. Ball, Whittington Chambers, King's Road, Southsea, honorary secretary.

CONTINUING its discussion of the State and provincial museums, the *Museums Journal* in its February issue suggests that this country is not merely falling behind others, but has even taken a step backward. "The post created for dealing with provincial museum work at the Board of Education has now been vacant for more than a year." The regulations formerly "laid before Parliament annually, as part of a Board of Education command paper, setting forth the conditions upon which loans of objects and grants of money were made to provincial museums, were last issued in 1910." These alleged facts seem curiously inconsistent with the activity of discussion on the educational use of museums that prevailed a few years ago at the Ministries of Reconstruction and Education. This is not altogether to be explained by the necessity for economy, since what is wanted is not so much fresh expenditure as the co-ordination and utilisation of the means ready to hand.

DONATIONS to the Maidstone Museum during the past year include an albino specimen of the American grey squirrel, shot near Maidstone; a lower jaw of the woolly rhinoceros found in Maidstone, and remains of the cave lion and the mammoth from the river-drift at Aylesford; a miscellaneous collection containing many fine minerals, formerly the property of Prof. Arthur Connell, F.R.S., of St. Andrews; fragments of a baked earth bowl associated with a calcined flint nodule (? a pot-boiler) found at Borough Green; three pieces of Late Celtic pottery from the Cherry Orchard Estate, near Maidstone; and a copy of William Smith's "Delineation of the Strata of England and Wales, etc.," published in 1815. The large number of other donations bears witness to the confidence placed in the curator, Mr. J. H. Allchin.

As from April 1 next, the importation into the United Kingdom of the plumage of birds not expressly excepted under the Importation of Plumage (Prohibition) Act, 1921, will be prohibited. The Board of Trade may, however, under section 2 (4) of the Act, "grant to any person a licence subject to such conditions and regulations as they may think fit authorising the importation of plumage for any natural history or other museum, or for the purpose of scientific research or for any other special purpose." All applications for licences under this sub-section should be addressed to the Imports and Exports Licensing Section, Board of Trade, Great George Street, Westminster, S.W.1.

THE annual meeting and excursions of the Somersetshire Archæological and Natural History Society will be held at Clevedon on July 4–6. The president-elect is Sir William Boyd Dawkins.

MR. G. V. COLCHESTER has been appointed to the post of geologist on the Geological Survey of the Anglo-Egyptian Sudan in succession to Mr. C. T. Madigan, who now holds a lectureship in geology at Adelaide University.

AT a meeting of the Institution of Automobile Engineers on February 8 Mr. E. L. Bass read his paper on "Engine Lubrication," for which the Daimler premium for the session 1920–21 was awarded. Lt.-Col. D. J. Smith was elected president for the session 1922–23.

ON Tuesday next, February 21, Sir Arthur Keith will begin a course of five lectures at the Royal Institution on "Anthropological Problems of the British Empire," Series 1: Racial Problems in Asia and Australasia. The Friday evening discourse on February 24 will be delivered by Prof. J. Joly on "The Age of the Earth."

THE thirty-first annual meeting of the Royal Society for the Protection of Birds will be held at the Middlesex Guildhall, Westminster, S.W.1, on Tuesday, February 21. The chair will be taken at 3 p.m. by the Duchess of Portland, and an address on the work of the society will be delivered by Viscount Grey of Fallodon.

At the annual general meeting of the Royal Meteorological Society on January 18 the following officers were elected:—*President:* Dr. C. Chree. *Vice-Presidents:* Mr. C. L. Brook, Mr. W. W. Bryant, Mr. R. H. Hooker, and Dr. E. M. Wedderburn. *Treasurer:* Mr. W. Vaux Graham. *Secretaries:* Mr. J. S. Dines, Mr. L. F. Richardson, and Mr. Gilbert Thomson. *Foreign Secretary:* Mr. R. G. K. Lempfert. *Council:* Dr. J. Brownlee, Mr. D. Brunt, Mr. C. J. P. Cave, Mr. J. E. Clark, Mr. R. Corless, Mr. Francis Druce, Mr. J. Fairgrieve, Col. H. G. Lyons, Mr. Henry Mellish, Sir Napier Shaw, Dr. G. C. Simpson, and Mr. F. J. W. Whipple. Communications should be addressed to the secretaries at 49 Cromwell Road, South Kensington, S.W.7.

The following officers and members of council of the Royal Astronomical Society were elected at the anniversary meeting on February 10:—*President:* Prof. A. S. Eddington. *Vice-Presidents:* Dr. J. L. E. Dreyer, Sir F. W. Dyson, Prof. A. Fowler, and Prof. H. F. Newall. *Treasurer:* Col. E. H. Grove-Hills. *Secretaries:* Dr. A. C. D. Crommelin and the Rev. T. E. R. Phillips. *Foreign Secretary:* Prof. H. H. Turner. *Council:* Prof. A. E. Conrady, Dr. J. W. L. Glaisher, Mr. P. H. Hepburn, Mr. J. Jackson, Dr. H. Jeffreys, Prof. F. A. Lindemann, Dr. W. H. Maw, Prof. T. R. Merton, Prof. J. W. Nicholson, Mr. J. H. Reynolds, Lt.-Col. F. J. M. Stratton, and Mr. H. Thomson.

The annual general meeting of the Physical Society of London was held on February 10, and the following officers and members of council were elected:—*President:* Dr. A. Russell. *Vice-Presidents:* Lord Rayleigh, Prof. T. Mather, Mr. T. Smith, and Prof. G. W. O. Howe. *Secretaries:* Mr. F. E. Smith, "Redcot," St. James's Avenue, Hampton Hill, and Dr. D. Owen, 62 Wellington Road, Enfield. *Foreign Secretary:* Sir Arthur Schuster. *Treasurer:* Mr. W. R. Cooper. *Librarian:* Dr. A. O. Rankine. *Other Members of Council:* Mr. C. R. Darling, Prof. C. L. Fortescue, Dr. E. Griffiths, Dr. E. H. Rayner, Mr. J. H. Brinkworth, Mr. J. Guild, Dr. F. L. Hopwood, Dr. E. A. Owen, Dr. J. H. Vincent, and Dr. G. B. Bryan.

A translation of the Nobel Prize address delivered by Prof. Max Planck before the Royal Swedish Academy of Sciences on "The Origin and Development of the Quantum Theory" will be published at an early date by the Oxford University Press.

Readers in search of book bargains should see Catalogue No. 454 of Messrs. William Glaisher, Ltd., 265 High Holborn, W.C.1, and Catalogue No. 424 of Mr. F. Edwards, 83 High Street, Marylebone, W.1, in which are to be found the titles of many science books offered at greatly reduced prices. The works in the first-named list are publishers' remainders; those in Mr. Edwards's are second-hand.

Our Astronomical Column.

Fireball Observed in Sunshine.—Mr. W. F. Denning writes that on February 7, at 3.55 p.m., he observed a brilliant fireball descending in the northern sky. The sun was shining at the time, and the firmament was almost cloudless. The fireball moved with moderate speed, varying in size and lustre as it fell, and its motion was directed to the north-north-west point of the horizon, but it disappeared when 21° in altitude. Its brilliancy was such that had it appeared at night the heavens would have been strikingly illuminated. The fireball was observed from other places, and it appears certain that it was moving from a radiant point near the star Capella. There is a well-known shower of brilliant meteors from this region in the month of February. It is hoped that further observations of the recent fireball will come to hand so that its height, velocity, and exact direction may be computed.

A Printing Chronograph.—The printing chronograph was invented by Prof. G. W. Hough, of Dearborn Observatory, in 1885. It is briefly described by Prof. Sampson in the Monthly Notices, R.A.S., for April, 1903. Its use leads to a decided increase of accuracy in the recording of transits or other time observations as compared with older forms of chronograph. This becomes of particular importance now that the use of the recording micrometer has considerably reduced the errors in the signals sent from the telescope to the chronograph.

The Société Genevoise, 95 Queen Victoria Street, E.C.4, is now showing a new printing chronograph. There are three discs, marking minutes, seconds, and hundredths, which revolve in an hour, a minute, and a second respectively; the first has to be set by hand to agree with the clock; the adjustment of the others is effected automatically. When a signal is sent the discs are pressed momentarily against a typewriting ribbon, behind which is a paper tape; the tape is moved automatically after each signal; there is thus no waste of paper between the signals, and a night's record is comprised in moderate limits; this counterbalances the greater awkwardness of a tape record as compared with a cylindrical one for a long night's work. The discs are electrically driven by a motor the E.M.F. of which is 12 volts, supplied by secondary cells. The net weight of the installation is 66 lb., and gross weight 110 lb.

Nova Puppis 1902.—The *Gazette Astronomique* for December last records the discovery of a new star by Miss Woods from the negatives taken at the Harvard Observatory. The position of the nova was R.A. 8h. 9m. 36·4s., decl. −26° 15·8′ (1900); the star was thus situated on the fringe of the Milky Way, the region in which novæ are usually found. The following is a summary of the facts recorded:—1901 (invisible), <16 mag.; 1902, September 24, <10·3 mag.; November 19, 7 mag.; December 6, 7 mag.; 1903, June 3, 10·5 mag.; and 1905, <14·5 mag. (invisible afterwards). More than 400 negatives of the region were examined. Judging from the facts recorded, it looks as if the nova reached its maximum some time before November 19, 1902, because it is not usual for new stars to maintain their maximum magnitude for such a long period as seventeen days. No photographs of the spectrum were taken.